MARSHALL STAR

Marshall Space Flight Center — May 31, 2001

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PC-based test system nets NASA Continual Improvement Award

by Debra Valine

Not too long ago, system computers for structural loads testing were big and expensive mainframes. Marshall test engineers have been able to incorporate new technology to improve the old system computer and save NASA money.

Those big mainframes of not too long ago have been replaced with a personal computer-based system that not only saves NASA millions of dollars, but cuts overall operations time by 72 percent.

"We replaced the old mainframe system for structural strength testing with a PC-based system," said Alan Patterson, deputy group leader in Marshall's Structural and Dynamics Testing Group.

He presented his team's work on the Structural Loads Test Measurement Acquisition System (SLTMAS) to the 16th Annual NASA Continual Improvement and Reinvention Conference on Quality Management May 10 in Alexandria, Va. His was one of five presentations from across NASA — and he was presented with the Continual Improvement Award on behalf of his team for the

*See **PC Test System** on page 3*

Shuttle motor test is successful; will help improve safety, reduce costs

by Lynnette Madison

A full-scale Space Shuttle Reusable Solid Rocket Motor was test fired for 123.2 seconds May 24 in Promontory, Utah, at Thiokol Propulsion, an Alliant Techsystems Inc., company.

"The test went smoothly and an initial look at the data indicates all objectives were achieved," said Steve Cash, chief engineer for the Reusable Solid Rocket Motor Project Office at the Marshall Center.

The test is part of the flight qualification process of a new insulation design on the motor's nozzle-to-case joint that will improve flight safety and helps reduce costs on the motor.

Support motors are used to evaluate, validate and qualify changes proposed for the Shuttle's Reusable Solid Rocket Motor. The motor tested was built using the same controls and documentation requirements as that of flight motors. On this motor, there were 93 objectives and a total of 576 instrumentation channels being tested. The two-minute test duration was the same length of time that the motors perform during Shuttle flights.

There were four major certification objectives for the test of Flight Support Motor-9. One of the more important tests was a change in insulation design on the nozzle-to-case joint J-leg. The proposed design change improves the thermal barrier protecting the O-rings on the motor by eliminating polysulfide, a putty-like material applied to the joint surface as the motor is assembled. The new design incorporates a J-joint — a joint shaped like a J — made of rubber for a better seal and a carbon fiber braided rope.

NASA Photo

Onlookers watch the successful test of the Shuttle motor.

The rope, which is downstream of the J-joint, is another safety addition because it absorbs heat should gas seep past the joint. The new design will enhance the primary thermal barrier and will add another thermal barrier with the rope.

*See **Motor Test** on page 5*

Integrated Financial Management Program receives NASA's Acquisition Improvement Award for software procurement

from the Core Financial Project

The software evaluation team for the Integrated Financial Management Program's Core Financial Project recently received NASA's Acquisition Improvement Award for their work on the project's software procurement.

Marshall's Kathy Shockley chaired the evaluation team, that included more than 30 NASA employees highly skilled in accounting, logistics, procurement or information technology. Team members were nominated and selected from across the Agency.

Shockley and her team supported the development of cross-Agency requirements, conducted extensive benchmarking of past performance and extended functionality, and provided a month of on-site physical testing of the final two bidding competitors' products.

This procurement was for a commercial off the shelf leading edge financial system. Systems, Applications and Products in Data Processing will serve as the backbone software system for the Core Financial Project under NASA's IFM Program.

With implementation of the Core Financial software, NASA will have timelier, more consistent and reliable information for management decisions, and improved accountability to enable full cost accounting, budgeting and management. The Core Financial Project and its use of Systems, Applications and Products in Data Processing will also help NASA achieve efficiencies and operate more effectively, resulting in improved information exchange with its customers and stakeholders.

Photo by Terry Leibold, NASA/Marshall Space Flight Center

Kathy Shockley, center, receives a certificate of recognition from Marshall Center Deputy Director Jim Kennedy, left, and Dave Bates, the Chief Financial Officer.

Shockley's team was confronted with many challenges, including an aggressive evaluation schedule compounded by the need for additional software demonstrations by both vendors.

"A large, diverse team from across NASA dedicated a significant amount of their professional energy to establishing consensus agency requirements, thoroughly evaluating multiple highly competitive proposals, and enabling the selection of a very high quality product at a very good price," said Mike Mann, director of the Integrated Financial Management Program. "The process was highly innovative and significantly streamlined over past practices."

The IFM Program Core Financial Software procurement was a large NASA procurement with a thorough evaluation process. A General Services Administration Information Technology Multiple Award Schedule contract was used to streamline the procurement process. Under normal conditions, a procurement of this type would take 229 days from receipt of an acquisition request to award. This procurement took only 134 days.

Marshall is NASA's Lead Center for the Core Financial Project. The Core Financial Project and Systems, Applications and Products in Data Processing will be implemented at Marshall in June 2002. Following its successful pilot at Marshall, the project will roll the software out to all other Centers, giving NASA its first fully integrated financial management system.

For more information on the IFM Program or the Core Financial Project, visit the Web at: *http://ifmp.nasa.gov* and *http://corefinancial.ifmp.nasa.gov*

Obituaries

Ferguson, Robert F., 90, of Hartselle, died May 16. He retired from Marshall in 1973 where he worked as a supervisory general supply specialist.

Drinkard, Rodney, 64, of Hartselle, died May 14. He retired from Marshall in 1991 where he worked as an aerospace engineering technician. He is survived by his wife, Reba Drinkard.

Morris, Marie, 88, of Huntsville, died May 9. She retired from Marshall in 1975 where she worked as a contract specialist.

PC Test System

Continued from page 1

work they have done.

"We represented continual improvement based on cost savings, time to implement and capabilities — which includes expansion into neural networks and advanced computing."

Versions of the SLTMAS data acquisition system has been used for structural strength testing of major NASA space flight hardware for more than 35 years — from Saturn 1 to the International Space Station.

The mainframe system could not economically meet the increased demand for large-scale structural strength test services due to high upgrade and maintenance costs; extensive schedule time required between tests for system pre- and post-test operations; and its historically demonstrated long software development and integration time.

"Using a PC card to emulate the mainframe data bus enabled Marshall to reuse existing high-speed data acquisition hardware, which resulted in a savings of $5.4 million," Patterson said. The PC-SLTMAS also reduced overall operations time by 72 percent, decreased development time by 88 percent, and decreased programmer workforce by 94 percent. These figures far exceeded expectations.

"A significant portion of the improved operations time is a result of performing an engineering units conversion of the raw, binary data recorded from the test article in a background process during the test," he explained.

At the conclusion of testing, the engineering units data are copied to a CD and provided to the customer. In previous versions of the system, the raw data would be processed into engineering units following the test which could take several weeks of effort depending on the number of channels recorded for the test.

NASA Photos

Alan Patterson, left, receives the Continual Improvement Award on behalf of his team.

The PC-SLTMAS team, from left are Sean Thompson, Structural and Dynamics Testing Group; Rich Tito, Spike Software Inc.; Gregg Gibbs, Computer Sciences Corp.; Mike Longmeyer, Structural and Dynamics Testing Group; Reese Eidson, Computer Sciences Corp.; Randy Pearson, Pearson Consulting; and Bob Peele, Computer Sciences Corp.

NASA Administrator Dan Goldin had challenged the Marshall Center to start working toward using advanced computing systems six months ago when he briefed Marshall employees on the funding for Space Launch Initiative.

During the Continual Improvement presentation, an application of an advanced computation method, neural networks, was shown to be one of the next improvements of the SLTMAS.

The neural network, developed in-house by Structural and Dynamics Testing Group for modal testing, has been trained to evaluate the quality of measurement data and highlight measurements that are suspect such as open circuits.

For test applications where the number of measurement points ranges in the thousands, a smart, automated evaluation tool greatly decreases test checkout and verification time. The neural network will be easily incorporated in the next version of the SLTMAS to further improve operations efficiency.

The writer, employed by ASRI, is the Marshall Star editor.

NASA radio frequency spectrum managers meet at Marshall

from Information Services Department

With the increase in the number of people using landline telephones and cell phones, it has become even more important to monitor the radio frequency spectrum assignments to ensure everyone has service, and does not interfere with frequency allocations for programs at Marshall.

To help meet this need, NASA has radio frequency spectrum managers at each NASA site, and each year, those managers meet. This year that meeting was at the Marshall Center.

Marshall Center Deputy Director Jim Kennedy and Marshall spectrum manager Chet Young opened the annual spectrum managers meeting May 1. Representatives attended from each NASA Center and Department of Defense, National Telecommunications and Information Administration, Federal Communications Commission and the U.S. Army.

The National Telecommunications and Information Administration Office of Spectrum Management is responsible for federal government use of the radio frequency spectrum, with assistance and advice from the Inter-service Radio Advisory Committee.

NASA Handbook Directive NHB 2570.6B requires each Center to appoint a spectrum manager and defines his duties and responsibilities.

Responsibilities include the coordination of all radio frequency spectrum activities, projects and programs involving the installation with the NASA National Program Spectrum manager and other government organizations.

Marshall's spectrum manager is the clearing authority for all radio frequency radiating devices at Marshall and the Michoud Assembly Facility in New Orleans. Operation of any device that radiates radio frequency energy on post must be cleared through the spectrum manager.

Due to radio frequency congestion, regulations have been established that must be obeyed on an international basis. Limits have been established for bandwidth, emission types, and power flux density, as well as specific operating frequency band. Coordination is required between the civil sector and the federal government agencies, as well as international organizations.

Spectrum managers provide interference analyses to determine the potential interference from existing transmitters or to existing receivers and to nominate new frequencies consistent with pre-approved allotment plans based on these interference analyses.

Current Marshall programs are the Gravity Probe-B, May 1, 2002, launch; Propulsive Small Expendable Deployer System, August 2001 launch; Small Payload Access to Space, October 2001 launch; Weather Experiments Using Unmanned Aerial Vehicles; and X-37.

Marshall has 126 active radio frequency assignments that must be renewed or deleted every five years.

The Information Services Department at Marshall supports spectrum management. Computer Sciences Corp., under the PrISMS contract, provides engineering and operations support for these services. Computer Sciences engineers Lee Ridings, Muse Mann and Jack Hemby supported this activity. Sadie Walker provided meeting coordination.

NASA's spectrum managers gather under Marshall's Bldg. 4200 complex sign.

Photo by Doug Stoffer, NASA/Marshall Space Flight Center

UNC-Charlotte gives Fastrac nozzle a new home

Dr. Robert Johnson, left, dean of engineering at the University of North Carolina in Charlotte and the American Society of Precision Engineers Student Chapter, receives a Fastrac nozzle from Tim Lawrence of Marshall's Materials, Processes and Manufacturing Department. Marshall is donating the nozzle to the university.

Administrator asks everyone to be careful this summer

by NASA Administrator Dan Goldin

The Centers for Disease Control and Prevention (CDC) in Atlanta recently reported a startling statistic — in 2000, according to their estimates, nearly one out of every 10 U.S. residents received treatment in a hospital emergency room.

From their estimates, the CDC data showed that 93.6 percent of the injuries were the result of accidents — this translates into about 29 million injuries that could have been prevented.

Seven million people were treated for falls, 5.6 million because they were hit by something, and 5.4 million were treated for transportation-related accidents. Overexertion sent 3.2 million to the emergency room, and cuts/pierces/stabs accounted for another 2.4 million visits. Dog bites, fire, poisoning, stings and machinery accidents injured hundreds of thousands more.

Everyone thinks, "It can't happen to me," but the odds of injury to you or a loved one are surprisingly high. Each of us needs to avoid hazards and unsafe behaviors, at work and especially at home. NASA has established a goal of zero mishaps in the workplace, and I encourage you to establish the same goal for yourself and your family.

Basic awareness and simple safety precautions can keep you out of the emergency room.

• Falls injured the most people. When the floor or sidewalk is wet or uneven, watch your footing. On stairs, always use the handrail. Slips, trips and falls are also NASA's most common mishaps.

• Being hit by things was next. Basic common sense can keep you safe here. Watch where you're going and what you're doing. Be careful when using tools, doing home improvement tasks, lifting and carrying objects and playing sports.

• Transportation-related accidents were a close third. On foot and on a bike, be cautious and aware of traffic. When driving, consider what other drivers or pedestrians — or children — might do and be prepared. Don't allow yourself to be distracted and buckle up — safety belts will cut in half the likelihood of fatality in automobile accidents. Know and follow all the safety rules if you are driving, boating or flying.

• Most importantly, think about what you're going to do. Do some mental hazard analyses when planning activities, both on and off the job. Ask yourself "What could go wrong?" and identify the precautions you should take to avoid an accident. Simply thinking before acting could save your life or the lives of those you love. This may sound like trivial advice, especially to the well-educated members of the NASA workforce, but remember, one in 10 U.S. residents ended up in the emergency room last year. Make sure you are not among the unfortunate.

Please have a safe summer.

Motor Test

Continued from page 1

The upgrade is slated to fly on the Shuttle in late 2004.

The firing also retested a new adhesive that bonds metal parts to phenolic parts in the nozzle; new environmentally friendly solvents; and demonstrated a new nozzle ablative insulation for the motor.

The test was conducted in the T-97 bay of the Thiokol test facility, located north of Salt Lake City. During the next several months, the data will be analyzed and the results for each objective provided in a final report. The metal case segments and nozzle components will be refurbished for reuse.

The final report on the test will be available in September. The next test is planned for October 2001.

The writer, employed by ASRI, supports the Media Relations Department.

Assistant chief counsel pulls double duty — for NASA and Army JAG Corps

by Debra Valine

Assistant Chief Counsel Lou Durnya spends his days reviewing contracts and other legal matters for NASA in Marshall's Chief Counsel Office. One weekend a month and two weeks a year, he also provides legal counsel for the U.S. Army Reserve.

Durnya

For NASA, Durnya reviews government contracts, Space Act agreements, represents NASA in contract claims before the Armed Services Board of Contract Appeals and Federal Courts, handles protests before the General Accounting Office, as well as handles environmental law issues.

As a Reserve officer with the 139th Legal Support Organization in Nashville, Durnya serves as deputy commander of the unit and supervises 25 attorneys and 11 legal specialists. He recently was confirmed by the U.S. Senate and promoted to the rank of colonel.

Durnya received his military training while in the Reserve Officer Training Corps program pursuing a bachelor's degree in business at Seton Hall University in South Orange, N.J. Upon graduation, he was named Distinguished Military Graduate and commissioned a second lieutenant in the Signal Corps of the U.S. Army Reserve.

He attended law school at the University of Richmond in Virginia from 1972-1975 before being transferred to the Judge Advocate General (JAG) Corps and reporting to his first active duty Army assignment in the Staff Judge Advocate Office at the 101st Airborne Division at Fort Campbell, Ky. He specialized in government contract law.

"I had always loved the space program and used to stay home from school to watch the Mercury, Gemini and Apollo launches," Durnya said. So, when he saw a job opportunity as a contracts attorney with NASA at Kennedy Space Center in Florida, he applied. He took that job in 1979, and left the active duty Army, but stayed on the rolls as an inactive reserve.

"I went back to active Reserve status after I transferred to the Marshall Center in 1982," Durnya said. "My old boss, from the 101st Airborne Division, William K. Suter, got promoted to brigadier general, and when I went to congratulate him, he asked me, 'What are you doing for the Reserves?' When I said 'nothing,' he told me I should get back into it." Suter is now the Clerk of the U.S. Supreme Court.

Being a military lawyer is not quite like the popular television show, "JAG." While there are court cases when a soldier is charged with violating the Uniform Code of Military Justice, military lawyers also help soldiers prepare for war.

"My unit in Nashville provides soldiers with legal documents, such as powers of attorney and wills," Durnya said. "We prepare them for possible duty overseas." Durnya has helped process soldiers for major military operations such as Operation Desert Storm in Saudi Arabia and Operation Joint Endeavor in Bosnia.

The military ensures each soldier and his or her family has the proper paperwork to take care of family business in the soldier's name while the soldier is away from home, and also for dispensation of the soldier's estate should he or she die while on duty.

Durnya was featured in a JAG recruiting campaign that appeared in numerous bar association journals and law school publications.

Both NASA and the U.S. Army have recognized Durnya for his contributions to each. Among his numerous NASA awards, he was presented with a Silver Snoopy Award and an Exceptional Service Medal. His Army awards include the Meritorious Service Medal, four Army Commendation Medals and Army Achievement Medal. He's also listed in the fourth edition of "Who's Who in American Law," and is a former president of the North Alabama Chapter of the Federal Bar Association.

He and his wife, Beth, have two children: Cameron and Sarah.

The writer, employed by ASRI, is the Marshall Star editor.

> ***"I had always loved the space program and used to stay home from school to watch the Mercury, Gemini and Apollo launches."***
>
> ***— Lou Durnya***

Thrift Savings Plan

The Thrift Savings Plan Open Season is under way through July 31. This is a chance for employees to start or change the amount of their contributions. The form for enrolling or increasing contributions is available on the Web at: *www.tsp.gov*. For more information, call Debbie Allen at 544-7536 or Ginger Martin at 544-5654.

Small Business Celebration

The 2001 Small Business of the Year Celebration will be at 6 p.m. June 14 at the Von Braun Center. The event — hosted by the Huntsville/Madison County Chamber of Commerce — will recognize the top business stars for 2001. Tickets — at $35 each or $280 to reserve a table — are available through June 7 from Rosa Kilpatrick of the Government and Community Relations Department at 544-0042.

NSSTC parking lot closed

During annex construction at the National Space Science and Technology Center (NSSTC), the north parking lot will be closed. If visitors are unable to find parking in the south parking lot, additional parking is available in the northwest and upper south parking areas, accessible from Bradford Drive north of the NSSTC building. This entrance is open 7:30 a.m.-4:30 p.m. All other outside doors require key cards.

Information conference, expo

The Information Assurance Conference and Exposition is being held June 6-7 at the Bob Jones Auditorium in Bldg. 5304 in the Sparkman Center. The Marshall Center is teaming with the U.S. Army Aviation and Missile Command and the Ballistic Missile Defense Organization to sponsor the event. Admission is free. To register, visit the Web at: *wwwTechnologyForums.com*

Listening, coping classes

Workshops on coping with tough times and improving listening skills will be held June 28 in Bldg. 4200, room G-13D. Coping with Tough Times: How You Can Turn the Negatives in Your Life into Positives will be from 8-11:30 a.m. The course teaches how to activate the positive forces within you and eliminate the negatives from your personal and professional life. Improve Your On-the-Job Listening and Speaking Skills will be from 12:30-4 p.m. This course teaches how to communicate well with others. For more information, call Chrissa Hall at 544-5468. Register via AdminSTAR.

Clubs and Meetings

Instrumentation Division meets

Members and friends of the Measuring Branch, Telemetry Branch and Radio Frequency Branch are invited to meet the first Tuesday of each month at 11 a.m. at the Redstone Golf Club Coffee Shop. For more information, call Tom Escue at (256) 232-1549.

Sports

Women's Golf

The Huntsville Chapter of the Executive Women's Golf Association invites all levels of lady golfers to come out and participate. For more information, log-on to our Web site at: *www.EWGA.com* or *www.EWGAhuntsville.com*. You can also call the hotline at (256) 852-9184 or e-mail Ginger Ferguson at: *fergieg@netzero.net*.

Celebrating Asian/Pacific American Heritage Month

Amanda Goodson, director of Marshall's Safety and Mission Assurance Office, makes closing remarks during the 12th Annual Asian/Pacific American Heritage Month program festival held May 17.

Photo by Doug Stoffer, NASA/Marshall Space Flight Center

Employee Ads

Miscellaneous

★ Small computer desk, $25. Black velour love seat with various color accent patches, $75. 883-5396
★ Looney Tunes vibrating bouncer, $15; travel bassinet/play yard, $40; diaper Genie, $5. 852-2145
★ NordicTrack manual treadmill w/computer, timer and oak wood trim, $125. 858-9535
★ iMAC 350MHz, 64MB RAM, 7GB HD, Indigo, $500 obo. 464-8836/535-5504 pager
★ Snapper riding lawnmower, rear engine, 8HP, stand-on-end capability, $495. 461-6337
★ Pioneer 6-CD changer, $50; Pioneer 6-cassette changer, $75; Sharp carousel microwave, $75. 880-1544/David
★ Computer monitors, two 17" Magtech, one 15" Micron, need repair, $15 for all. 890-0302
★ Motorola BitSurfr ISDN terminal adapter, $50; Compaq PC Companion C140 with entertainment pack & case, $75. 721-7607
★ Brunswick pool table, Paragon oak w/ cherry finish, navy blue felt, 1" slate, drop-leather pockets, all accessories, $2,000. 509-3392
★ Kitchen Aid dishwasher, almond, $50. 883-5168
★ Futon sofa, black entertainment center, washer/dryer, glass table, chairs, dishes. 859-3647
★ Smith Corona personal word processor w/ monitor, (Quiet Printer), $75 obo. 461-8369
★ Remington Model 10, 12-gauge pump shotgun, collectible, $225. 883-0686
★ Refrigerator, RCA, side-by-side, icemaker and water in door, 2 yrs. old, $400. 881-3797
★ Office desk, wood, 2.5'x5' veneer table top, 5 drawers, refinished, $150 obo. 830-0866
★ 98 GT Timberline mountain bike (blue) w/ brand new front suspension, $450 obo. 683-1019
★ Orlimar driver, clone, 10 degree loft, $55. 851-7406
★ Computer printers, various dot matrix, inkjet plus, one laser jet, make offer. 534-4968
★ Zenith color television, 19", not cable-ready. 880-1544/David
★ Solid Oak Cherry stained dining room table w/12 chairs, $2,050 firm. 256-498-2028
★ Kenmore washer and dryer, pair, $80 for both. 880-9171
★ Boy's 24" 10-speed bike, $35. 864-2629
★ King Cobra oversize irons, 3-PW, GW, and SW, 10 irons, steel regular flex, $180. 883-7442
★ Treadmill, adjustable, multi-speed, $50. 233-1487
★ Bush Hog mower for 20-45HP tractor, Big Bee brand, 5' cut, $190. 325-6000
★ Student furniture, table/4 chairs, $20; dresser/mirror, $30; night stand, $10; 3-bookcases, $45; double-bed frame, $20. 882-2654

Vehicles

★ 1978 Chevy 1/2-ton, pickup, blue, 350 engine, power brakes/steering, a/c, auto, Class III hitch, $650 obo. 778-9149
★ 1998 GMC C1500, 6-cyl., auto, new tires, bedliner, tilt, cruise, air, long bed, $7,950. (256) 753-2278
★ 1979 Chevy pickup, 93K miles, automatic, long bed, tool box, good tires, $1,450. 650-0677
★ 1996 Nissan Pathfinder LE, 2WD, green w/ gray leather interior, 69K miles, $14,000 obo. 232-1940
★ 1989 Bronco II, 4WD, 5-speed, new Michelins, a/c, aluminum wheels, many options, $2,900 obo. 534-8186
★ 1998 Honda Passport, 62K miles, silver, CD, power options, $16,500 obo. 830-2959
★ 1969 Camaro, everything new, primed, needs paint and upholstery, SB400, 4-speed Muncie, 3.73 rear-end, $9,000 obo. 509-3392
★ 1995 Nissan King-Cab pickup, red, 98K miles, $5,850. 881-9084/Bob
★ 1998 Ford Mustang GT, white, 5-speed, all-power, premium sound w/CD, 55K miles, $12,500 obo. 722-3432/256-586-7658
★ 1993 Dodge Grand Caravan SE, one-owner, many new parts, service records available, $4,800 obo. 895-9520
★ 1995 VW Passat GLX, 5-speed, leather, sunroof, all records, 76K miles, $9,000. 837-4743
★ 1992 Dodge Caravan, 96.8K miles, $4,100 obo. 461-4908
★ 1996 Chevy Blazer LT, 4WD, auto, CD, leather, new Michelins, 60K miles, $11,900. 658-6183

Wanted

★ One person for carpool, Guntersville area, 7 a.m.-3:30 p.m. 544-2908/544-8010
★ Dresser, 4-drawer, in good condition, maple or light finish; metal bunk bed, good condition. 682-5181
★ Baby crib in good condition. 837-7465
★ Ride to work from the Old Monrovia/ Rideout Road area. 544-3826
★ Full-time nanny for two children, home located in the Riverton area. 851-9519
★ Girl's 12" bike with brakes. 830-5001

Found

★ Bracelet, Bldg. 4200, Charlie's Grill area. Call 544-4758 to identify/claim
★ Money in Bldg. 4203, Ladies Room, 6th floor. Call 544-1226 to identify amount.

Lost

★ Velvet ring box with three rings inside in Bldg. 4200 area. Call 544-4758

Free

★ To good home, red tail boa, 4-5' long, 1-2 years old, needs glass cage with temp. at 85 degrees. 883-2638/882-6892

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